CLAIMS

1. (Currently amended) A transmitter comprising:

a modulator to generate a modulated output signal responsive to at least one baseband information signal;

an amplifier to generate a transmit signal based on amplifying said modulated output signal, said amplifier having at least first and second operating modes; and

a phase compensator to selectively impart a compensating phase shift to said at least one baseband information signal to offset an expected phase shift imparted to said transmit signal by said amplifier when operating in said second mode;

said phase compensator comprising a complex multiplier to selectively multiply said at least one baseband information signal by a compensation term to impart said compensating phase shift to said at least one baseband information signal that is opposite of said expected phase shift imparted to said transmit signal by said amplifier when operating in said second mode.

2. (Original) The transmitter of claim 1 wherein said amplifier comprises a multi-stage power amplifier with at least one selectively enabled amplifier stage, that is selectively enabled to switch between said first and second operating modes.

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4. (Currently amended) The transmitter of claim 1 wherein said phase compensator further comprises:

an indicator signal input to receive a mode indicator identifying a current mode of said amplifier, said current mode being one of said at least first and second modes;

a compensation signal input to receive compensation values;

processing logic, including said complex multiplier, to multiply said at least one baseband information signal by a compensation term based on said compensation values; and

control logic responsive to said mode indicator to select as output from said phase compensator said at least one baseband information signal taken before or after operation of said processing logic.

5. (Original) The transmitter of claim 4 further comprising a processor to generate said compensation values used to set said compensation term.

6. (Original) The transmitter of claim 5 further comprising memory associated with said processor to hold at least one stored value used to set said compensation term.

7. (Original) The transmitter of claim 6 further comprising a look-up table structure of stored values used to vary said compensation term based on a current operating condition of said transmitter.

8. (Original) The transmitter of claim 7 wherein said look-up table structure comprises a table of stored values associated with operating said transmit amplifier over a range of ambient temperatures.

9. (Original) The transmitter of claim 1 further comprising a test circuit to determine said expected phase shift imparted to said transmit signal by said amplifier when operating in said second mode.

10. (Original) The transmitter of claim 9 further comprising a processor to selectively activate said test circuit.

11. (Original) The transmitter of claim 10 further comprising memory associated with said test circuit to store a reference value determined from testing said amplifier via said test circuit, said reference value used to set said compensation term.

12. (Original) The transmitter of claim 1 further comprising memory to store a reference value representative of said expected phase shift imparted to said transmit signal by said amplifier when operating in said second mode, said reference value used by said phase compensator to set said compensation term.

13. (Original) The transmitter of claim 1 wherein said phase compensator comprises a portion of a digital processor executing program instructions to effect phase compensation of said at least one baseband information signal.

14. (Original) The transmitter of claim 1 wherein said transmitter comprises a base station transmitter forming a portion of a base station, said base station supporting wireless communication with at least one mobile terminal.

15. (Original) The transmitter of claim 1 wherein said transmitter comprises a mobile terminal transmitter forming a portion of a mobile terminal, said mobile terminal supporting wireless communication in a mobile communication environment.

16. (Original) The transmitter of claim 15 wherein said mobile terminal further comprises a processor to control said phase compensator.

17. (Original) A method of substantially preventing phase shift changes in a transmit signal arising from changing modes in a transmit amplifier, the method comprising:

generating a modulated signal responsive to a baseband information signal;

amplifying said modulated signal via said transmit amplifier to generate said transmit signal;

selectively operating said transmit amplifier in a first mode and at least one additional mode, wherein each additional mode imparts an expected phase shift in said transmit signal relative to said first mode;

sensing when said amplifier changes to one of said additional modes; and

imparting a compensating phase shift to said baseband information signal that is opposite to said expected phase shift imparted to said transmit signal for a current one of said at least one additional modes.

18. (Original) The method of claim 17 wherein said first mode and said at least one additional mode of operating said transmit amplifier correspond to different transmit power ranges, and further comprising setting a value of said compensating phase shift based on a current one of said at least one additional modes.

19. (Original) The method of claim 17 further comprising updating a value of said compensating phase shift based on at least one current operating condition of said transmit amplifier.

20. (Original) The method of claim 19 wherein said at least one current operating condition of said transmit amplifier comprises ambient temperature, and further comprising setting said compensating phase value based on a current ambient temperature of said transmit amplifier.

21. (Original) The method of claim 19 further comprising accessing a look-up table based on said current ambient temperature to set said value of said phase shift imparted to said baseband information signal.

22. (Original) The method of claim 17 further comprising:

testing said transmit amplifier to determine a calibrated value for said characteristic change in phase shift imparted to said transmit signal for at least one of said at least one additional modes; and

storing said calibrated value for subsequent use in imparting said phase shift to said baseband information signal.

23. (Original) The method of claim 22 further comprising updating said calibrated value based on periodic testing of said transmit amplifier.

24. (Original) The method of claim 17 wherein said transmit amplifier comprises a portion of a mobile terminal for use in a mobile communication network, and further comprising:

changing between said first mode and said additional modes based on a transmit signal requirement of said mobile terminal; and

setting a value of said compensating phase shift based on a current one of said first mode and said additional modes.

25. (Original) The method of claim 24 wherein said transmit signal requirement is a transmit signal power requirement, and further comprising selecting one of said first mode and said additional modes of said transmit amplifier based on said transmit signal power requirement.

26. (Original) The method of claim 17 wherein imparting said compensating phase shift to said baseband information signal that is opposite to said expected phase shift imparted to said transmit signal for a current one of said at least one additional modes comprises:

imparting no compensating phase shift to said baseband information signal when said transmit amplifier operates in said first mode; and

imparting a selected compensating phase shift to said baseband information signal when said transmit amplifier operates in one of said additional modes.